STRATEGIES FOR SUCCESS

Teachers and coaches frequently ask how to best prepare their students for the Science Bowl competition. There are various successful strategies your club can utilize. Here are just a few ideas and guidelines that may help.

Forming a Science Bowl Club

If your school doesn't already have a math and/or science club, start one as soon as possible. You don't have to have 30 students interested in science to make a Science Bowl Club. Getting one started usually takes a little effort, but once you get it going, they usually are very easy to keep going year after year. Also, once you do form one, make sure it is worth the student's time. Historically, the more successful teams at science competitions are made up of very enthusiastic students that come from schools with fun, well-organized Science Bowl Clubs (regardless of size). We are talking about quality not quantity.

Team Selection

Selection for your Science Bowl Team can be difficult. Each student should be knowledgeable in all of the 7 discipline areas. However, the more successful teams have students that are more specialized in different areas. For example: Student "A" might be better at math than the rest of his/her team. Student "B" might be better at physics and astronomy that the rest of his/her team. This will give your team a good balance with an "expert" in each of the 7 disciplines. It is also a good idea to have a few grade levels represented, not just seniors. By breaking up your team (3-4 juniors and/or seniors and 1-2 freshmen and/or sophomores) you will still have some veterans this year while giving a few rookies the necessary experience to carry your team next year. Some teachers let the students vote for team members based on knowledge, performance, and attendance. Others hold practice competitions to determine the team. It is ultimately up to you, so choose your team wisely. Most competitions allow non-participants to watch all the matches and to cheer their team's achievements.

Make a Schedule

Make an agenda or study schedule during your first meeting. Your team needs to decide how many hours they will spend per week in the practicing. Initially, practice times may be short, but as the competition nears you may want to schedule more intensive practices. The difficulty of the practice questions is more important than the length of time spent practicing. Brainstorm on what your team thinks are good ideas for review and practice. Decide how long your meetings will last. An hour meeting might be broken up with 30 minutes of review of the subject for the week, and 30 minutes of knowledge games. At least 2 practice competitions are recommended. This will help familiarize the students with the rapid fire, oral presentation for the questions (which is quite different from answering review questions from their text books). Keep the team enthusiastic and focused on the task at hand each week. Bring in science teachers or the school principal to act as practice moderators. Be sure the contest rules are adhered to stringently.

Example Schedule

Week 1: Introduction/fun meeting. (make your schedule)
Week 2: Biology & Chemistry
Week 3: Math & Physics
Week 4: Earth Science & General Science

Thanksgiving Break

Week 5: Astronomy
Week 6: Review Rules & Strategies
Week 7: Practice competition

Christmas Break

Week 8: Biology & Chemistry
Week 9: Math & Physics
Week 10: Astronomy
Week 11: Earth & General Sciences
Week 12: Review Rules, Strategies, & Seven Disciplines
Week 13: Practice Competition
Week 14: Practice Competition

Study Wisely

As mentioned earlier, each student needs to be familiar with all seven subjects. However, students should be concentrating the bulk of their studying/reviewing on their own, 2-4 areas of expertise. Students should concentrate their efforts on learning topics that questions are likely to come from. The oral toss-up questions must be answered in less than 5 seconds and the bonus questions must be answered in less than 20 seconds. Focus your time studying things like definitions, formulas, concepts, and short answer problems. Some of the questions will be current topics in science and technology and there may be some longer questions that may involve a complicated solution. In addition, there will be visual questions at the National finals. By studying wisely the students will be able to spend more time practicing and learning to solve problems quickly.

Know the Rules & Game Playing Strategies

Make sure each student knows the rules of the competition. This cannot be stressed enough. Every year there is a team that loses points because the students don't know all the rules. Also teach them the strategies of the game for different situations. Believe it or not, this could be your ace in the hole. For example: if your team is in the lead during the second half of the game, recognize that the clock is now your ally. If you are awarded a bonus question, let the students take a few extra seconds to double check with each other to make sure they get the answer correct. The questions usually get harder as the match progresses. If they are too hasty with their decision, the lost ten bonus points could come back to haunt them in a close match. Being well versed in the rules and knowing all the strategies of the game, your team will have the edge in a close match and may even allow them to triumph over a better team that isn't as strategic.

Practice, Practice, Practice

There is no substitute for hard work and this means self-discipline and practice. Make an effort to duplicate an actual competition as much as possible. Also it is a good idea to rotate the person asking the questions each game. This will allow them to get experience hearing the questions come from different tones of voice, accents, and dialects. Don't wait until the month before the Regional Science Bowl to practice for the competition. Use old test questions from your previous exams or even Trivial Pursuit and Jeopardy games if you have to. Just get them familiar answering the questions orally and waiting to be recognized before answering.

Keeping It Fun

Don't lose sight of the overall focus of getting your students interested in science and math. Finding the right combination of fun games and interesting study tools could take a little work. There are many new and interesting ideas out there. The worldwide web is an excellent place to get some great knowledge games, CD-ROMs and interactive study tools. Just remember, the more students enjoy it, the more they'll want to do it, and the more successful they'll become. Given the proper motivation, preparation, and encouragement, your team will have a successful and rewarding science bowl experience. You can then channel your Science Bowl Club's enthusiasm and momentum to do other fun things throughout the year For example: the National Science Olympiad program, Math Counts, Odyssey of the Mind, or the Destination ImagiNation program.

Establish Team Goals

There can be only one winner of the National competition, but participation itself is important. Involve the students in the establishment of realistic goals for the team in this competition year. Celebrate and document these goals in posters and team practice sessions. Many National champions build on the success of each year until the championship is won.

Set goals that will challenge the team. Teams competing for the first time win many regional competitions. Don't be intimidated because your school/group has not participated in the past.

Miscellaneous

Make sure the principal, teachers, administrative staff and parents at your at your school/group know that the Science Bowl Club is an active program and that you are the person in charge.

Find out about your school's policy regarding use of the school facilities and equipment. Do they allow use of shop facilities, computer lab, etc.?

If your school has similar programs, such as the Knowledge Bowl, their clubs may use comparable buzzer systems. Ask if you can borrow their equipment.

You may also want to try and **Make Your Own National Science Bowl Competition Buzzer**. The Western Area Power Administration has provided a schematic and materials list for student boxes and a master box.

The last option recommended to practice with would simply be eight different fluorescent pieces of paper. The student can be acknowledged according to color.

Official clocks to time the rounds of competition and the questions can be purchased from a local sporting goods store or you may want to utilize the clock in the room. We recommend stopwatches to time questions.

When practicing, set up the room the same as an actual competition room. (See picture)

Get your students familiar with the roles of the officials.

Resources

Inform your science club of current events in the subject areas used in competition, as well as energy related events.

Some of the best resources are the Glossaries in the back of books.

Some publishing companies offer complimentary textbooks to educators for review. Contact the sales representative from your region by e-mail or phone and ask for information to acquire these resources for your Science Bowl Clubs.

National Science Bowl/DOE web site is **www.scied.science.doe.gov**

Publisher Contacts:

McGraw Hill	800-338-3987	http://www.mheducation.com/
Addison-Wesley	781-944-3700	
Prentice Hall	201-236-7000	www.prenhall.com
ITP	800-876-2350 x7068	
IDG	800-228-4078	
Jones and Bartlett Publishers Inc.	978-443-5000	www.jbpub.com
Harcourt Brace	215-238-5500	www.harcourt.com

Reference Books - Your team might consider using:

ASTRONOMY

Title	Author	Publisher
In Quest of the Universe	Karl F. Kuhn	Jones & Bartlett
Horizons- Exploring the Universe	Michael A. Seeds	ITP
The Cosmic Perspective	Bennett Donahue	Addison Wesley

BIOLOGY

Title	Author	Publisher
The Living Science	Miller-Levine	Prentice Hall
Human Biology	Chiras	Jones and Bartlett
Biology-The Web of Life	Strauss Lisowski	Addison-Wesley

CHEMISTRY

Title	Author	Publisher
Chemistry	Harold Nathan	IDG
Organic Chemistry	Frank Pellegrini	IDG
General Chemistry	Umland & Bellama	ITP

EARTH SCIENCE

Title	Author	Publisher
Environmental Science	Nebel Wright	Prentice Hall
Earth Then & Now	Montgomery - Dathe	McGraw-Hill
Physical Geology	Mark Crawford	IDG

GENERAL SCIENCE

Title	Author	Publisher
Living in the Environment	G. Tyler Miller, Jr.	ITP
Asking about Life	Tobin & Dusheck	Harcourt
The NY Public Library-Science Desk Reference	Macmillan	Any Bookstore

MATHEMATICS

Title	Author	Publisher
The Harper Collins- Dictionary	E.J. Borowski & J.M Borwein	Harper Collins Publishing
Calculus	Farrand Poxon	Harcourt Brace
Physics: Algebra/Trig	Hecht	ITP

PHYSICS

Title	Author	Publisher
Contemporary College Physics	Jones Childers	McGraw-Hill
College Physics 3rd	Wilson Buffa	Prentice Hall
Conceptual Physical Science	Hewitt-Suchocki-Hewitt	Addison-Wesley